

## **REMARKS**

The present Amendment is in response to the Examiner's Office Action mailed December 20, 2006. Claims 1 is amended. Claims 1, 5–7, 11–13, 16, 24, and 27–33 are pending.

Reconsideration of the application is respectfully requested in view of the above amendments to the claims and the following remarks. For the Examiner's convenience and reference, Applicant's remarks are presented in the order in which the corresponding issues were raised in the Office Action.

Please note that the following remarks are not intended to be an exhaustive enumeration of the distinctions between any cited references and the claimed invention. Rather, the distinctions identified and discussed below are presented solely by way of example to illustrate some of the differences between the claimed invention and the cited references. In addition, Applicants request that the Examiner carefully review any references discussed below to ensure that Applicants understanding and discussion of the references, if any, is consistent with the Examiner's understanding.

### **I. Examiner's Interview**

Applicant's express their appreciation to the Examiner for conducting a telephone interview with Applicants on April 19, 2007 in which proposed claims 1, 24, and 34 were discussed and a tentative agreement was reached with respect to claim 24.

### **II. PRIOR ART REJECTIONS**

#### **A. Rejection Under 35 U.S.C. § 103**

The Examiner rejects claims 1–3 and 5–7, 11–13, and 16 under 35 U.S.C. § 103 as being unpatentable over an article entitled "Enhanced Performance of Offset-Gain High-Barrier Vertical-Cavity Surface-Emitting Lasers", by Young et al. ("Young") in view of U.S. Patent No. 5,740,191 to Kasper, et al. ("Kasper") and further in view of U.S. Patent No. 6,822,984 to Ono et al. ("Ono"). Of those claims, claim 1 is an independent claim. For at least the reasons outlined below, Applicant respectfully submits that claim 1 as currently amended is allowable over the art of record.

The claimed invention is directed to a vertical cavity surface emitting laser module that is tuned to operate at a temperature greater than room temperature. The module includes a temperature sensor and a heater. The heater is configured to transfer heat to the laser when an “activation temperature” occurs. Claim 1 has been amended to delete the phrase “at least in part in relation to” and now requires that the activation temperature be determined “from a current curve of the vertical cavity surface emitting laser.” Support for this amendment can be found in the Application at ¶ [0032].

The Office Action cites *Ono* for the purpose of teaching the use of current to control a heater/cooler in a VCSEL (p. 4, ¶ 1). *Ono* teaches using a photodiode to detect the optical output of a VCSEL. The intensity of the photoelectric current from the photodiode is fed back to the VCSEL to control the temperature (*see col. 2, lines 22–32*). Thus, *Ono* teaches using the optical output (converted to current) to control temperature. In contrast, claim 1 as amended, requires that the activation temperature be determined “from a current curve of the vertical cavity surface emitting laser.” The intensity of the photoelectric current in *Ono* is not the current curve of the VCSEL. Consequently, claim 1, as amended, is believed to be allowable over the art of record.

The Examiner rejects claims 24 and 27–33 under 35 U.S.C. § 103 as being unpatentable over *Young* in view of “*Kasper*” and further in view of U.S. Patent Application Publication No. 2003/0033819 to *Prescott* (“*Prescott*”). As discussed in the Examiner Interview, *Prescott* fails to teach a control module that is “configured to operate in whichever operational mode requires the least amount of energy, relative to the other operation mode.” Therefore, Applicants respectfully submit that rejection of claim 24 under § 103 should be withdrawn.

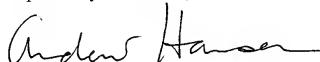
Claims 5–7, 11–13, 16, and 27–33 all depend from either claim 1 or claim 24. Therefore, claims 5–7, 11–13, 16, and 27–33 are allowable for at least the same reasons that claims 1 and 24 are allowable.

**CONCLUSION**

In view of the foregoing, and consistent with the tentative agreement reached during the Examiner Interview, Applicants believe the claims as amended are in allowable form. In the event that the Examiner finds remaining impediment to a prompt allowance of this application that may be clarified through a telephone interview, or which may be overcome by an Examiner's Amendment, the Examiner is requested to contact the undersigned attorney.

Dated this 20<sup>th</sup> day of April, 2007.

Respectfully submitted,



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